

**INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION
MCDR INSPECTION REPORT
BHUBANESWAR REGIONAL OFFICE**

General:

SL. No.	Particulars	Details
1	Name of the Mine	Sukinda Chromite Mine
2	Date of inspection	9/11/2023
3	Name of inspecting officer	Prashant S Hegde, RMG
4	Name accompanying mine officials	S/Shri Suresh Prusty, DGM (Geology) & QP, Sandeep B Narade, QP, Saroj Kumar Mahanta, Mines Manager cum Mining Engineer and H. S. Sahoo, Geologist.
5	Last date of Inspection & Officer	30/06/2023 Shri Rajani Kanta Rautaray, AME
6	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total Lease area: 116.76 Ha. Forest area: 115.05 Ha. Non-Forest area: 1.71 Ha.
7	Minecode	11ORI19014
8	IBM Registration Number under rule 45 of MCDR, 2017	IBM/4200/2011
9	Name of the lessee, Address, phone, email and fax number	M/s Indian Metals & Ferro Alloys Ltd At- Bomikhal, PO- Rasulgarh Bhubaneswar- 10 Phone No.- 06742580100 Email- minesplanningcell@imfa.in
10	Village	Kaliapani
11	Taluka/Mandal	Sukinda
12	District	Jajpur
13	Pincode	755047
14	State	Odisha
15	Post office	Kaliapani
16	Nearest police station	Kaliapani
17	Nearest Railway station	J K Road
18	Date of Grant of Mining Lease	17.08.1999
19	Date of Execution	04.09.1999
20	Date of opening of Mine	15th September 1999
21	Date of expiry	30-09-2029
22	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri C R Ray IMFA Building At/Po - Bomikhal, Rasulgarh, BBSR. District: Khurda, State: Odisha, Pin code: 751010 Phone: (0674) 2580100/125, Fax: (0674) 2580020 Email id: crray@imfa.in

I/21142/2023

23	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr Lalatendu Mahapatra, At- Kaliapani, PO- kaliapani Via – Sukinda, Dist – Jajpur, 755047 Phone No.- 06742580100 Email- lalatendumahapatra@imfa.in Date of Appointment-24/01/2022
24	Name of the Mines Manager with Address, mobile no, email, fax number and date of appointment in mine	Shri Saroj Kumar Mahanta, First class Mines Manager certificate of competency (U/R) Kaliapani, Jajpur, 755047 Mob.9937431477, Email-sarojmohanta@imfa.in Date of appointment:-11/09/2023
25	Name of the Mining Engineer , Qualification and total experience with Address, mobile no, email, fax/phone number and date of appointment in mine	Shri Saroj Kumar Mahanta, First class Mines Manager certificate of competency (U/R) Kaliapani, Jajpur, 755047 Mob.9937431477, Email-sarojmohanta@imfa.in Date of appointment:-01/08/2023
26	Name of the Geologist , Qualification and total experience with Address, mobile no, email, fax number and date of appointment in mine	Shri H S Sahoo , Geologist M.Phil in Geology, Kaliapani, Jajpur, 755047 Date of appointment:-16.11.2010 Full Time
27	Date of Approval of Mining Plan/Review of Mining Plan/ their modifications with five-year period and specific condition in approval letter, if any.	Modifications of approved Review of the Mining Plan No. MRMP/A/40-ORI/BHU/2021-22 Dated 05.04.2022 for the period 2022-23 to 2023-24
28	Mineral (s) granted in lease and proved for mining	Chromite
29	Method of Mining(Open cast, Underground)	Open cast
30	Category (Fully Mechanised, Others or Manual)	A – Fully Mechanized
31	Captive/Non Captive	Captive
32	Present EC Capacity	6 LTPA

OBSERVATIONS/COMMENTS OF INSPECTING OFFICER:**1)Exploration:---**

SL.No	Item	Proposals (FY 2022-23)	Actual work	Remarks
1a	Backlog of previous year	FY-2021-22: 3 nos BHs FY 22-23: 7 nos of BHs with 650 meterage	28 nos boreholes drilled with 7541 meterage	To meet future U/G operation proposals.

I/21142/2023

1b	Exploration over lease area for Geological axis 1 or 2.	Exploration proposed to meet grade-wise chrome ore requirement of their plant.	G-1: 46.76 Ha, G-2:70Ha Area proved as Non-mineralized: 70 Ha	Entire potentially mineralized area explored under G-1
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NA	Maheshwari Mining Private Ltd; 516.15 Lakhs	_____
1d	Balance area to be explored to bring Geological axis in 1 or 2	NA	Entire potentially mineralized area explored under G-1	Ore Band-I & II has been proved from UPL(-2 mRL) to -1087mRL & -611mRL respectively.
1e	Balance reserves as on 01.04.2023	NA	As on 1/4/23 reserves in tonnes : 111: 7,596,389 tonnes (10 to 52 % Cr ₂ O ₃); 121+122: 4,001,000 (10 to 52 % Cr ₂ O ₃) Grand Total: 11.597 Million tonnes	As per valid approved modified RMP dated 05.04.2022.
1f:	General remarks of inspecting Officer on Geology, exploration etc.	Sukinda Chromite Mine is a part of chromite bearing Sukinda ultramafic complex. Regional chromite band No : Band-I & 2, are exit in this ML. Entire potentially mineralized area explored under G-1; Within the mining lease area the chrome ore mineralization of Band -I & II established up to a depth of -1087 mRL and -611mRL respectively, so far.		

2)Development:--

SL. No.	Item	Proposals (FY 2022-23)	Actual work	Remarks
2a	Location of development w.r.t. lease area	Band I Quarry: (372251E- to 372802E & N-2326324 to 2326872N) & Band II Quarry: (372635E- to 372878E & N-2326279 to 2326550N)	Within the proposed location.	_____
2b	Separate benches in topsoil, overburden	Separate benches in overburden and minerals	As per proposals	_____

I/21142/2023

	and mineral			
2c	Stripping ratio or ore to OB ratio	1:6.46	1:7.48	Ratio in tonnes
2d	Quantity of topsoil generation in m3	NIL	6048	Incidental top soil generated due to development of Band-II.
2e	Quantity of overburden generation in m3	1,001,050 m3	1,050,000 m3	(BD: 2)
2f	General remarks of inspecting Officer on development of pit w.r.t. type of deposit etc	Developments of pits are being carried out as per the approved modified RMP. The lessee has already submitted draft RMP on 20/9/23 and was under process.		

3)Exploitation:--

SL.No.	Item	Proposals (FY 2022-23)	Actual work	Remarks
3a	Number of pits proposed for production	One (Band-I pit)	One (Band-I pit)	_____
3b	Quantity of ROM mineral production proposed	310,000 tonnes	280,611 tonnes	Non-achievement of Grab Trial mining proposals due to time & economic constraints.
3c	Recovery of salable/usable mineral from ROM production	100 %	100 %	_____
3d	Quantity of mineral reject generation	NIL	NIL	_____
3e	Grade of mineral reject	NA	NA	Threshold value of Chromite:

I/21142/2023

	generation and threshold value declared			+10 % Cr2O3
3f	Quantity of sub-grade mineral generation	Same as para 3d		_____
3g	Grade of sub-grade mineral generation	Same as para 3e		
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	_____
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Nil	NIL	_____
3j	Provision of drilling & blasting in mineral benches	115 mm diameter Drilling in staggered pattern and controlled blasting.	As per proposals.	_____
3k	Provision of mining machineries in mineral benches	Yes, mining by Excavators & Dumpers combination.	As per proposals.	_____
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	8m bench height with 8 to 12m width	As per proposals.	_____
3m	Total area covered under	33.771 Ha	33.298 Ha	_____

I/21142/2023

	excavation/ pits					
3n	Ore to OB ratio for the pit/mine during the year	1:6.46		1:7.48		Ratio in tonnes
3o	Total area put in use under different heads at the end of year	Particulars	Total Area(Ha) at at the end of FY 2022-23	Broadly within the limit.		—————
		Area under Mining	33.771			
		Overburden/ Waste dumping+ Sub-grade Dump(6.6 Ha)	51.497			
		Mineral Storage	4.046			
		Infrastructure (Occupied by plants buildings & roads	23.198			
3p	Production of ROM mineral during last five-years period, as applicable			2018-19	341,003	Unit: In tonnes
		2018-19	351,000	2019-20	320,141	
		2019-20	351,000	2020-21	266,493	
		2020-21	280,000	2021-22	256,659	
		2021-22	351,000	2022-23	280,611	
		2022-23	310,000			
3q	General remarks of inspecting Officer on method of mining etc	Open-cast fully mechinsed mining method is being carried as per approved modified RMP. Proposed Trail mining by grab for blocked ore has not been achived due to time & economic constraints. Further, the proposed two nos of vetical shaft (30 meters each) sinking for U/G operation has not been achived due to delay of feasibility study report of U/G project. Now, the lessee has submitted draft RMP on 20/9/23 with revised O/C and U/G operation proposals.				

4)Solid Waste Management-Dumping:--

SL.N o.	Item	Proposals (FY 2022-23)	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject	Separate dumping of OB and Mineral reject & Top soil: Nil	As per the proposals.	—————

I/21142/2023

4b	Location of topsoil, OB & mineral reject dumps	Top soil- NA Overburden- E2055 N1945, E3165 N2304 (on existing OB Dump) Mineral Reject - NA	Broadly as per proposals.	_____
4c	Number of dumps within lease area and outside lease area	One within ML	One within ML	_____
4d	Location of dumps w.r.t. ultimate pit limit	Dumping proposed over existing dump which located outside of UPL (Western part of ML)	As per proposals.	_____
4e	Number of active & alive dumps	One active	One active	_____
4f	Number of dead dumps	NIL	NIL	_____
4g	Number of dumps stabilised	Partly active.	Partly active.	_____
4h	Whether Retaining wall or garland drain all along dumps are there	Retaining wall / garland drain all along dump proposed earlier.	Retaining wall or garland drain constructed all along dump and maintenance are being carried out	_____
4i	Length of Retaining wall or garland drain all along dump	No proposal; However, repair & maintenance proposed	Retaining wall /Garland drains well maintained	_____.
4j	Number of settling ponds	Maintenance proposed.	Well maintained	_____
4k	Specific comments of	Overburden wastes and mineral reject management are being carried out as per the approved proposals. 6048 m ³ of incidental top soil generated during FY 2022-23 due to development of Band-II and was utilized for plantation. The		

I/21142/2023

inspectin g Officer on waste dump managem ent	coir matting of 5030 Sq.m area of dump slope achieved against the proposed 5000 Sq.m area.
--------------------------------------------------------------	--------------------------------------------------------------------------------------------

5)Solid Waste Management-Backfilling:--

SL.No	Item	Proposals (FY 2022-23)	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	No such proposals	NIL	_____
5b	Area under backfilling of mined out area	No such proposals	NIL	_____
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area	NA	Nil	_____
5d	Total area fully reclaimed & rehabilitated	NA	NIL	_____
5e	General remarks of inspecting Officer on backfilling and reclamation etc	During year 2023-24 onwards, the OB wastes generated from O/C operation of Band-II shall be utilized for back-filling at Band-I pit as band -I quarry reached its UPL for O/C operation (i.e. up to -2 mRL). As reported, back-filling at band -I quarry to be start shortly considering de-watering of more seepage due to monsoon.		

6)Progressive Mine Closure Plan:---

SL.N.	Item	Proposals (FY 2022-23)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time - Rule 26(2).	Before 1 st July of, 2022-23	Submitted on time	NIL
6b	Management of worked/ mined out benches/dumps i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year iv) Cumulative no. of plants	i)1.1 Ha (dump-slope) ii) 1.1 Ha iii)2,750 nos iv) NA	i)1.10(dump-slope) ii) 1.1 Ha iii) 2,820 nos (Within ML) iv)85,349 nos so far	2820 nos saplings planted within ML at dump slope during year 22-23, besides 1,100 nos saplings planted outside ML.

I/21142/2023

	v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	v) NA vi)NA	(Within ML) v) Plantation vi)13.27 Lakhs	
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	i) No such proposals ii) NA iii)NA iv) No such proposals v) No such proposals	i) Nil ii) Nil iii) Nil iv)Nil v) Nil	No backfilling proposals for FY 2022-23
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	i)NIL ii)NIL iii)NIL	i)NIL ii) NIL iii) NIL	_____
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Environmental monitoring in Core zone and buffer zone will be as per MOEFCC and SPCB guidelines.	Environmental monitoring in Core zone and buffer zone was carried out as per the proposals and parameters are within the limit.	_____
6f	General remarks of inspecting Officer on PMCP compliance & progressive closure operation etc	Lessee has implementing PMCP proposals as per approved modified RMP. The coir matting of 5030 Sq.m area of dump slope achieved against the proposed 5000 Sq.m area.		

7)Mineral Conservation:---

SL.No	Item	Proposals ((FY 2022-23)	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting by within lease area.	As per proposals	NIL
7b	Method of grade-wise mineral sorting i.e.	Mechanical	Mechanical	NIL

I/21142/2023

	manual or mechanical			
7c	Different grade of mineral sorted out at mines	Chromite Ore of following different size and grade proposed to be sorted out and dispatched (Below 40 % Cr ₂ O ₃ ; 40 to 52 % Cr ₂ O ₃ and 52 % & above Cr ₂ O ₃) Mainly friable ore	As per proposals	NIL
7d	Any beneficiation process at mines	None at present	As per proposals	NIL
7e	General remarks of inspecting Officer on mineral conservation & beneficiation issues	Grade-wise soring & dispatches of ore/mineral to their captive plant as per the proposals and there is no mineral conservation issue. The ore produced from mine is being consumed at their captive plant at Choudwar & Therubali & Plant acceptable grade of ore is +30%Cr ₂ O ₃ .		

8)Environment:--

SL.No.	Item	Proposals (FY 2022-23)	Actual work	Remarks
8a	Separate removal and utilization of topsoil	NIL	6048 m ³	Incidental top soil generated during FY 2022-23 due to development of Band-II and was utilized for plantation.
8b	Concurrent use or storage of topsoil	No such proposals.	Nil	_do_
8c	Separate dumps for overburden, waste rock, rejects and fines	Separate dumping of OB wastes	Carried out as per proposals.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposals	NIL	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	5000 Sq. m area of Coir matting of (Dump); 2750 nos plantation at dump of 1.1 ha area	5030 Sq. m area of Coir matting of (Dump); 2820 nos plantation at dump of 1.1 Ha area	_____
8f	Baseline information on existence of plantation & additional plantation done	2750 nos plantation within ML.	2820 nos saplings planted within ML year 2022-23. Total of 85,349 nos of saplings have been planted within ML covering an area of 27.76 ha. Similarly, total of 15,357 nos of	_____

I/21142/2023

			saplings have been planted at outside of lease area covering an area of 8.30 ha.	
8g	Survival rate	NA	90%	_____
8h	Water sprinkling on roads to control airborne dust	Regular sprinkling of water on Haul roads, Waste dump using Water tanker to suppress the dust.	Carried out as per the proposals.	_____
8i	General remarks of inspecting Officer on aesthetic beauty in & around mines area.	Aesthetic beauty in & around mines area is good as lessee implementing the PMCP proposal and carried out plantation as per the proposals.		

9) Compliance of Rule 45

SL.No.	Item	COMMENTS		Remarks.
9a	Status of submission of Monthly and Annual returns	Regularly submitting the MRs/ARs on-time.		Nil
S.N.	Item	Details GIVEN in A.R.	Actual in field	_____
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mines Manager: Shri Jalandhar Patra Mining Engineer: Shri Jalandhar Patra Geologist: Shri H. S. Sahoo	Actual also the same except Shri Saroj Kumar Mahanta, MM cum ME appointed on recently.	_____
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(1) Covered under current (O/C) Workings- 33.298 Ha (2) Used for Waste Disposal- 51.497 Ha (including Sub-grade Dump of 6.6 Ha) (3) Occupied by plant, buildings, residential, welfare, buildings and roads- 22.764 Ha (4) Other Purpose (Mineral Storage etc)- 9.2 Ha	Actual also as per AR	_____
9d	Scrutiny of Annual return on afforestation	2820 nos within ML +1100 nos Outside ML	Actual also as per AR	_____
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	NIL	Appear to be correct.	_____

I/21142/2023

9f	Scrutiny of Annual return on ROM stock and/or graded ore	<p>As on 31.03.2023 tonnes Stock ROM: 613,638 tonnes.</p> <table border="1" data-bbox="611 327 925 1010"> <thead> <tr> <th colspan="2">Fines closing stock in tonnes</th> </tr> </thead> <tbody> <tr> <td>Below 40 % Cr2O3</td> <td>3,703</td> </tr> <tr> <td>40 to below 52 % Cr2O3</td> <td>5,153</td> </tr> <tr> <td>52 % and above Cr2O3</td> <td>4,919</td> </tr> <tr> <th colspan="2">Lumps stock in tonnes</th> </tr> <tr> <td>Below 40 % Cr2O3</td> <td>75</td> </tr> <tr> <td>40 to below 52 % Cr2O3</td> <td>NIL</td> </tr> <tr> <td>52 % and above Cr2O3</td> <td>NIL</td> </tr> </tbody> </table>	Fines closing stock in tonnes		Below 40 % Cr2O3	3,703	40 to below 52 % Cr2O3	5,153	52 % and above Cr2O3	4,919	Lumps stock in tonnes		Below 40 % Cr2O3	75	40 to below 52 % Cr2O3	NIL	52 % and above Cr2O3	NIL	Appear to be correct.	_____
Fines closing stock in tonnes																				
Below 40 % Cr2O3	3,703																			
40 to below 52 % Cr2O3	5,153																			
52 % and above Cr2O3	4,919																			
Lumps stock in tonnes																				
Below 40 % Cr2O3	75																			
40 to below 52 % Cr2O3	NIL																			
52 % and above Cr2O3	NIL																			
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex. Mine price & production cost: Rs 7156.24 per tonne	Appear to be correct as captive mine	_____																
9i	Scrutiny of Annual return on fixed assets	Value of Fixed of Assets: Rs 83,07,13,814	Appear to be correct	_____																
9k	Scrutiny of Annual return on mining machineries	Back Hoe (1.2 cum) : 1 nos ; Back Hoe (2.1 cum) : 1 nos ; Back Hoe (3.1 cum) : 4 nos ; Front End Loader: 1 nos; Dumpers (30 to 35 T):29 nos ; Water tanker: 8 nos; Pumps: 20 nos; Dozer: 4 nos Motor Grader: 2 nos. Blast Hole Drill: 2nos	Observed to be correct	_____																

(10) Violation observed during current inspection and compliance position of earlier violation pointed out:

(a) Compliance position of earlier violation pointed out: No serious violation pointed out during earlier inspection dated 30/6/23.

(b) No serious violations observed during current inspection.

I/21142/2023

(11) On-line validation of star rating of templates submitted under rule 35 (FY-2022-23) has already been made on 2/8/23 for four star at RO level.

(12)The lessee has submitted DAI/drone survey data under rule 34A for FY 22-23 on 24/06/2023.

Date:04/12/2023

(Prashant S. Hegde)
Regional Mining Geologist